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TESTIMONY OF WILLIAM E. TAYLOR

Prepared on Behalf of Verizon New England Inc.,

d/b/a

Verizon Rhode Island

Before The

State of Rhode Island

And Providence Plantations Public Utilities Commission

Docket No. 3179

July 1, 2002

1 **TESTIMONY OF WILLIAM E. TAYLOR**

2 **I. QUALIFICATIONS**

3 **Q. Please state your name, occupation, and business address.**

4 A. My name is William E. Taylor. I am Senior Vice President of National Economic Research
5 Associates, Inc. (“NERA”), head of its telecommunications economics practice, and head
6 of its Cambridge office. My business address is One Main Street, Cambridge,
7 Massachusetts 02142.

8 **Q. Please summarize your qualifications.**

9 A. I have been an economist for over twenty-five years. I received a B.A. degree in economics
10 (Magna Cum Laude) from Harvard College in 1968, a master’s degree in statistics from the
11 University of California at Berkeley in 1970, and a Ph.D. in Economics from Berkeley in
12 1974, specializing in industrial organization and econometrics. I have taught and published
13 research in the areas of microeconomics, theoretical and applied econometrics, and
14 telecommunications policy at academic institutions (including the economics departments
15 of Cornell University, the Catholic University of Louvain in Belgium, and the
16 Massachusetts Institute of Technology) and at research organizations in the
17 telecommunications industry (including Bell Laboratories and Bell Communications
18 Research, Inc.). I have participated in telecommunications regulatory proceedings before
19 state public service commissions the Federal Communications Commission (“FCC”) and
20 the Canadian Radio-television and Telecommunications Commission concerning incentive
21 regulation, productivity, access charges, and pricing for economic efficiency. Since 1988, I
22 have testified in incentive regulation implementation and review proceedings in more than a
23 dozen states, filed numerous studies in the Federal Communications Commission’s initial
24 and review price regulation dockets for interstate telephone services, consulted on incentive
25 regulation issues in other US jurisdictions, the UK, New Zealand, Canada, and Australia,
26 and published my work in professional journals and books. Recently, I was chosen by the

1 Mexican Federal Telecommunications Commission and Telmex to arbitrate the renewal of
2 the Telmex price cap plan in Mexico.

3 A copy of my vita listing publications and testimonies is shown as WET-Exhibit 1.

4 **Q. Have you testified before the Rhode Island Public Utilities Commission?**

5 A. Yes, I have testified before the Rhode Island Public Utilities Commission (“PUC”) on
6 several economic issues, including price regulation (in 1991 and 1996), the economic
7 conditions under which competition in local and intraLATA markets will bring benefits to
8 customers (in 1995 and 1999), and the cost and price of interconnection and unbundled
9 network elements (in 1997, 1998, 1999 and 2002).

10 **II. INTRODUCTION AND CONCLUSIONS**

11 **Q. What is the purpose of your testimony?**

12 A. I have been asked by Verizon Rhode Island (“Verizon” or the “Company”) to review the
13 Rhode Island Alternative Regulation Plan (the “Plan”) and comment as an economist on: (i)
14 events that have altered the competitive nature of telecommunications markets since the
15 current price cap regime was established; (ii) the benefits from adopting flexible regulation
16 in markets opened to competition; and, (iii) the likely decrease in economic efficiency that
17 would result from retaining an indexed price cap plan like the one that has been in place.

18 **Q. Please summarize your testimony.**

19 A. The Company’s proposed Plan is much more in keeping with the recent changes in state
20 and federal regulation, legislation and technology than is the price cap plan approved by the
21 Commission in 1996 in Docket No. 2370. In addition, the Plan continues to protect
22 customers in markets where Verizon arguably retains some control over prices but is
23 structured to permit Verizon to compete vigorously in markets where it faces competition.

24 Rhode Island adopted price regulation in the early 1990s. That plan, save for the
25 elimination of earnings sharing in 1996, is essentially the same today as it was at the outset.
26 Implementation of the Telecommunications Act of 1996, along with changes in regulation
27 and technology have changed the structure of telecommunications markets in Rhode Island,

1 opening markets to competition from a variety of different providers using a variety of
2 different entry strategies. Expansion into adjacent markets has enabled entrants to offer
3 attractive packages of services (local, long distance and vertical services; Internet access;
4 wireless service; and cable) to both business and residential customers who prefer to
5 purchase an integrated bundle of services from a single provider. If the dynamic benefits of
6 these competitive initiatives are to be realized by consumers, there must be an associated
7 change in regulation.

8 Once a market has been opened to competition, regulatory constraints on all competitors
9 must be made competitively neutral so that all market participants—including
10 incumbents—make decisions regarding investment and service introduction, marketing and
11 pricing based on competitive rather than regulatory factors. From an economic standpoint,
12 the pricing flexibility embodied in the Company's proposed Plan generally meets these
13 requirements. Holding aside the effects of exogenous events, the Company proposes to cap
14 primary residential basic exchange rates at their current level plus no more than \$2 per line
15 for two years following the effective date of the Plan. Residential local usage rates would
16 also be capped at their current levels for two years. Following the two year period
17 residential dial-tone and usage rates would increase or decrease in response to the market at
18 the Company's discretion. Aggregate rates for switched access services would be capped at
19 the current level although Verizon would be able to change the rates of individual service
20 elements in this category so long as revenue increases are equal to or less than revenue
21 reductions within the category. The rates for all other tariffed retail services and all new
22 services would increase or decrease in response to the market at the Company's discretion.
23 Prices for access to Verizon's unbundled network element, interconnection and the level of
24 the Company's wholesale (resale) discount would continue to be regulated by the
25 Commission in accordance with the Federal Telecommunications Act of 1996. Verizon
26 faces substantial actual competition in its retail markets, and its ability to increase retail
27 prices is effectively constrained. Verizon does not have the ability to exercise market
28 power for services in the retail market.

29 The proposed Plan relies primarily on market forces to act as the price control mechanism;
30 generally provides marketing flexibility essential for Verizon Rhode Island; and, at the

1 same time, limits price changes for primary basic residential services for two years thus
2 explicitly providing an additional protection for residential customers. Importantly,
3 customers of all retail services are protected from exploitation of market power by both
4 actual and potential competition in those service markets, and by the mandatory supply of
5 unbundled network elements (“UNEs”) and resold retail services by Verizon at
6 Commission-regulated rates. In those markets where Verizon would have marketing
7 flexibility, an attempt to increase retail prices would result in an increased competitive
8 pressure from two sources: (i) the increased margin between the market retail price and
9 Verizon’s UNE prices which competitors pay and (ii) the increased absolute margin
10 between Verizon’s retail prices and the prices it charges competitors which purchase its
11 resold services at a fixed percentage discount.

12 **III. TELECOMMUNICATIONS MARKETS HAVE CHANGED IN**
13 **SIGNIFICANT WAYS SINCE THE IMPLEMENTATION OF THE**
14 **CURRENT PRICE CAP PLAN IN RHODE ISLAND**

15 **Q. What regulatory and legislative changes have affected legal and/or regulatory barriers**
16 **to entry into Rhode Island telecommunications markets since 1996 when the**
17 **Commission’s current price cap plan was adopted?**

18 A. The implementation of the federal Telecommunications Act of 1996 (“Telecom Act”) has
19 removed all legal and/or regulatory barriers to entry into Rhode Island telecommunications
20 markets. Section 253 of the Telecom Act requires all states to allow competition and
21 preempts any state or local government rules to the contrary:

22 No State or local statute or regulation, or other State or local legal requirement,
23 may prohibit or have the effect of prohibiting the ability of any entity to provide
24 any interstate or intrastate telecommunications service (§253 (a)).

25 It would be difficult to state the point more clearly: legal and regulatory barriers to entry
26 into telecommunications markets are gone.

27 Implementation of the Telecom Act has also swept away economic barriers to entry into
28 local exchange markets where the sunk costs necessary for a competitor to supply
29 ubiquitous service may have slowed entry in the past. Under the Act and subsequent

1 federal and state regulatory orders, Verizon provides UNEs at incremental cost-based prices
2 and makes all retail telecommunications services available for resale at a Commission-
3 approved avoided cost discount. As a result, the cost of entry for competitors who can now
4 choose among entry strategies—i.e., building facilities (based on a variety of technology
5 platforms), leasing parts of Verizon’s network at regulated rates, or simply reselling
6 existing Verizon retail services at economically efficient rates—is dramatically reduced.
7 As a result, competition is now practical for any service in any geographic area of Rhode
8 Island where a competitor can supply any portion of the facility or service as efficiently as
9 Verizon.

10 **Q. How do these changes affect retail telecommunications services in Rhode Island?**

11 A. Since entry into Rhode Island’s retail telecommunications markets is comparatively easy,
12 competitive pressure is brought to bear on retail prices for all services in all geographic
13 areas. That is, in addition to the current facilities-based and resale competition in Rhode
14 Island, the additional threat of entry from large, well-known telecommunications firms
15 presently supplying other services to Rhode Island customers effectively disciplines
16 Verizon’s retail prices even if there were little current competition on the ground.
17 Competition through resale or the use of unbundled network elements provides competitive
18 pressure on Verizon’s retail services throughout its territory because any significant
19 deviation between price and cost for a retail service will attract competitors with low sunk
20 costs of entry.

21 Moreover, the increased demand of customers for packaged services provided by a single
22 supplier through one-stop-shopping reduces the advantages of incumbency in all markets.
23 Verizon is an incumbent local exchange carrier, and other firms are incumbent in the
24 interLATA toll and data markets. Thus, when selling additional services in a package to a
25 current customer, it is no longer clear who is the entrant and who is the incumbent.

26 Finally, the fact that wholesale prices of UNEs, resold services and interconnection remain
27 extensively regulated under the Telecom Act reduces, if not eliminates, any need for
28 continued regulation of retail service prices. If Verizon contemplated an increase in a retail
29 service price, it would have to recognize that the increase would widen the margin between

1 the UNE rate and the retail rate, making facilities-based entry augmented by use of Verizon
2 UNEs even more attractive. Similarly, with a regulated wholesale discount for resold
3 services that is fixed in the short run, an increase in a retail price would increase the
4 absolute (cents per minute or dollars per line) margin within which resellers compete in the
5 retail market with Verizon. Because the sunk costs of entry by UNEs or resale are virtually
6 nil—particularly for current competitors in complementary markets (e.g., IXCs or CAPs)—
7 regulation of wholesale rates thus effectively regulates the rates for retail services.

8 **Q. How have technological changes impacted the market for traditional telephone**
9 **service?**

10 A. From a broad perspective, technological change is transforming the industry from a supplier
11 of fixed services associated with voice communication to a supplier of fixed and mobile
12 services associated with voice, data, images and video. In this transformation, the demand
13 for mobile service, data and other high capacity services such as Internet access, video and
14 cable services is growing faster than the demand for voice services.

15 Cable technology currently provides a viable alternative to incumbent LEC technology and
16 cable companies have already positioned themselves to compete as alternatives to
17 incumbent telephone company services, particularly for residential customers. They are
18 installing fiber-cable into their networks at a rapid pace, adding capacity, improving quality
19 and reliability, and forging alliances with other broadband providers. Following
20 implementation of the Telecom Act by January 2001 \$42 billion has been invested in cable
21 infrastructure.¹

22 Widespread cable modem service facilitates the provision of both cable telephony and high-
23 speed Internet access.² There is already a well-established firm active in the cable
24 telephony and cable modem markets.

¹ Comments of the National Cable Television Association, National Cable and Telecommunications Association Press Release, February 6, 2001.

² Kagan Media Appraisals. The State of Broadband Competition: An Analysis of Cable, Telco DSL, Fixed Wireless and Satellite Competition for High-Speed Data Services, 1999-2000. Compiled for the National Cable Television Association. (“Broadband Competition”).

1 **Q. Why is the development of broadband and cable services important?**

2 A. The fact that these technologies—radically different from traditional wireline voice
3 communications—are competing for different segments of the communications market
4 means that any regulation that distorts suppliers’ offerings or consumers’ choices is likely
5 to cause serious reductions in efficiency as these firms and technologies jostle for position
6 in the customer’s market basket. The more the outcome reflects consumer choice in
7 markets where all firms and technologies have an equal opportunity to compete, the better
8 off customers will ultimately be.

9 **Q. Is there any evidence demonstrating that the changes you describe above have actually**
10 **affected market conditions in Rhode Island?**

11 A. Yes. There is an abundance of evidence regarding actual competitive entry in Rhode Island
12 and that evidence demonstrates the variety and diversity of entry options that competitors
13 have exercised. In addition, the potential for further entry is evidenced by widespread
14 collocation in Rhode Island. Finally, the emergence of robust individual competitors to
15 Verizon, especially the competitive alternatives to Verizon’s local voice services posed by
16 the emergence of cable telephony, demonstrates the vibrancy of actual competition.

17 *Entry into the Rhode Island markets is taking place at a dynamic pace:* Evidence on the
18 numbers of lines served by competitors is revealing. According to Verizon data, there were
19 nearly 135,000 lines being served by competitors in February 2002, an increase of
20 approximately 29,000 lines from May/July 2001. Verizon’s retail access lines in service
21 decreased by over 32,000 over the same period. The number of interconnection trunks
22 grew almost 100 percent during the year 2000. Currently, competing carriers provide
23 access lines to almost 19 percent of Rhode Island telephone subscribers.³

24 *A lack of entry barriers is evidenced by competitors exercising the full range of entry*
25 *options:* Evidence on entry into Rhode Island telecom markets shows the full range of entry
26 options being exercised. Mr. Silvia reports that “In every Verizon RI central office in the

³ Data furnished by Verizon-RI.

1 state at least two of the three modes of entry are employed by carriers to serve customers,
2 and in the offices that serve 97 percent of Verizon RI's retail lines, all three modes of entry
3 are currently employed.”⁴

4 Facilities-based competition is widely considered the most potent form of competition in
5 the local telephone industry. There is a strong contingent of facilities-based competitors in
6 Rhode Island. There are at least 7 CLEC switches in Rhode Island. More than 79 percent
7 of the over 134,000 lines being served by competitors as of February 2002 were served by
8 competitors either totally or partially using their own facilities.⁵

9 *The potential for rapid further entry exists:* Competitors are extensively collocated in
10 Rhode Island wire centers. Competitors have access to 88 percent of Rhode Island
11 residence customers and 94 percent of Rhode Island business customers through existing
12 collocation.⁶

13 *The emergence of strong individual competitors to Verizon established that competition can*
14 *be sustained:* Mr. Silvia's testimony reports that Cox Communications' cable telephone
15 service is available to nearly 90 percent of the municipalities in Rhode Island.⁷

16 *New technologies have expanded the universe of potential competitors to Verizon:* The
17 emergence of Cox Communications and others as serious rivals to Verizon underscores the
18 diverse sources of competition to Verizon's local services. As of June 2001 there were
19 more than 400,000 wireless subscribers in Rhode Island.⁸

20 The empirical evidence that substantial changes have occurred in Rhode Island markets is
21 extremely strong. Moreover, the collocation evidence above suggests that as strong as the
22 recent growth in competitive activity has been, the potential for further acceleration clearly
23 exists as facilities-based competitors have access to almost all Rhode Island end-users. The

⁴ Testimony of Arthur D. Silvia, p. 4.

⁵ Data furnished by Verizon-RI.

⁶ Verizon data as of February, 2002.

⁷ Testimony of Arthur D. Silvia, p. 7.

⁸ Data furnished by Verizon-RI.

1 increasing technological sophistication in the telecommunications markets also suggests the
2 potential for strong growth in competitive activity: the evidence from cable telephony
3 implies that the universe of potential competitors to Verizon has expanded greatly in the
4 last few years.

5 **IV. COMPETITION IN RHODE ISLAND IS SUFFICIENTLY**
6 **DEVELOPED TO REQUIRE THE PRICING FLEXIBILITY IN THE**
7 **VERIZON PLAN.**

8 **Q. In economics, what does the term “effective competition” mean?**

9 A The term “effective competition” generally means a sufficient level of competition to
10 prevent an individual firm from profitably holding the market price above the competitive
11 level—i.e., from exercising market power. This principle is also embodied in the Merger
12 Guidelines of the U.S. Department of Justice, which describes a potential entrant as an
13 example of effective competition if it is likely that it can enter and supply output in
14 response to a price increase within a one-year period. Such entry is described in the Merger
15 Guidelines as sufficient to mitigate the exercise of market power.

16 As described in Verizon RI’s testimony, there is an abundance of evidence regarding the
17 level and growth of actual competitive entry that has already taken place throughout Rhode
18 Island as well as Verizon RI’s competitive losses. In addition, in Rhode Island, Verizon RI
19 has met the rigorous criteria established by Congress, the FCC and the Commission to
20 provide in-region interLATA long-distance services. Local exchange markets have been
21 opened to competition in Rhode Island; unbundled network elements and resold services
22 are available to CLECs at TELRIC cost-based rates on terms which are comparable to
23 Verizon RI’s own services for its retail customers.

24 **Q. Is a formal market power analysis necessary in each service and geographic market**
25 **for which Verizon RI requests market based pricing?**

26 A. No. Such studies would constitute a draconian procedure that could never be carried out by
27 the Commission in any reasonable or useful manner. It is both impractical and unnecessary
28 to require that Verizon RI produce, and the Commission evaluate, specific measures of

1 demand and supply elasticities in every market; the effect of such a proposal would be that
2 the Commission would likely never complete its analysis of Verizon RI's markets, and
3 unnecessary asymmetric price regulation would continue indefinitely, thereby reducing
4 consumer welfare.

5 The key question is simply whether the services for which Verizon RI seeks relaxed
6 regulatory treatment are subject to effective competition. If this is the case, then the
7 Commission should adopt this component of the Verizon RI Plan because effective
8 competition provides better results for consumers than imperfect regulation.

9 While economic theory provides a useful guide to the elements of a competitive analysis, it
10 does not supply a bright-line test that can be used in an adversarial proceeding to determine
11 when existing competitors discipline the market price sufficiently that the service can be
12 considered as competitive. There are no numerical standards readily available to determine
13 when market forces can safely regulate a service. Moreover, the specific information that
14 would be required for formal market power tests is not solely in the possession of Verizon
15 RI; it is equally in the possession of the entrants, i.e., of firms not subject to (or subject to
16 lesser degrees of) Commission jurisdiction.

17 In theory, the critical element in measuring market power is the profitability of holding the
18 price of the service above its competitive level for a significant period of time. To
19 construct the specific quantitative tests called for in a formal market power analysis, we
20 would need to estimate the price elasticity of the demand curve facing the firm at the
21 competitive price. That exercise would require generally unobtainable market data from
22 competing carriers along with assumptions regarding the actual and potential competing
23 services and their likely responses to changes in the incumbent firm's price. To assess the
24 likelihood that a supra-competitive price could be profitable for the incumbent requires
25 knowledge of existing and potential competitors' capacities and locations, the likely cost of
26 expansion, the degree to which their services can substitute for those of the incumbent, and
27 the appropriate weights to assign each of these factors.

1 In these circumstances, a more accurate measure of market power can be obtained by
2 assessing directly the barriers to entry and expansion that competitors face in Rhode Island
3 and the degree to which they have been able to overcome whatever barriers might remain.

4 **Q. In economic theory, measures of market share, barriers to entry and expansion (i.e.,**
5 **estimates of the elasticity of supply) and the market demand elasticity can be used to**
6 **determine if Verizon RI has market power.⁹ Do the data you refer to address these**
7 **theoretical issues?**

8 A. Yes. Standard economic theory makes clear the interdependence among the measures of
9 market power, market share and supply and demand elasticities. For a given level of
10 market power for firm i, for instance, the higher the elasticity of supply (i.e., the lower the
11 barriers to entry and expansion), the higher will be firm i's elasticity of demand. Such
12 relationships are valuable; the standard economic reference for measuring market power
13 also observes that:¹⁰

14 More important is the difficulty that would face a court or an enforcement
15 agency in estimating elasticities of demand for purposes of using our approach
16 in antitrust enforcement and adjudication. We have written elsewhere of the
17 practical difficulty of administering antitrust rules that require an explicit
18 measurement of the elasticity of demand or supply.

19 Additionally, Landes and Posner also make the point that information about "market share
20 alone is misleading" and should be considered only along with other indicators of market
21 power.¹¹

22 **Q. Please describe the data you believe to be relevant and how the Commission should**
23 **view them.**

24 A. The data I discuss above and which Verizon RI presents in more detail show there are no
25 substantial barriers to entry or expansion, that market demand continues to expand, and that

⁹ See, e.g., William M. Landes and Richard A. Posner "Market Power in Antitrust Cases," Harvard Law Review, March 1981: 937-996.

¹⁰ Landes and Posner 943.

¹¹ Landes and Posner 947.

1 Verizon RI's competitive losses are growing. In addition to the wire center specific data
2 presented in the testimony of Mr. Silvia, Verizon RI has also testified to access line losses
3 over time to competitors that employ resale, UNE, UNE-P and facilities-based service
4 provisioning.¹²

5 **Q. Are such data sufficient for the Commission conclude that Verizon RI's**
6 **reclassification proposals are warranted?**

7 A. Yes. Verizon RI has presented detailed data that demonstrate that there are no substantial
8 barriers to entry and that competition for business and residence services exists, is
9 widespread and is growing – which are precisely the relevant issues in this proceeding.

10 **V. CORRESPONDING CHANGES IN REGULATION ARE**
11 **NECESSARY TO FOSTER VIGOROUS COMPETITION.**

12 **Q. How should regulation reflect the fact that a market has been opened to competition?**

13 A. Once markets are opened to competition, regulation must adapt to set correct incentives for
14 efficient suppliers to enter the market and for inefficient suppliers to exit the market or
15 forgo entry. Such regulation may not treat incumbent firms *identically* with actual or
16 potential entrants. However, regulation of incumbents and entrants should be as *symmetric*
17 as possible so that regulation will be as competitively neutral as possible. Only then will
18 the process of competition benefit customers in the economic sense of channeling the
19 supply of services to those firms that best meet consumers' requirements (including price,
20 features, and service quality).

21 Competition should function as the price control mechanism. The purpose of adapting
22 regulation to competition is to replicate—to the extent possible—the competitive market
23 outcome, so that market participants base their actions on market factors—customers'
24 preferences—rather than on regulatory factors. In general, three principal changes are
25 required so that regulation does not distort the competitive process. First, as recognized by
26 the Commission when it introduced price regulation in Rhode Island, the focus of

¹² Testimony of Arthur D. Silvia, p. 10.

1 regulation should not restrict an *outcome* of the competitive process (e.g., rate of return) but
2 rather restrict factors that affect that outcome (e.g., prices). Second, the regulated firm
3 requires commensurate pricing and marketing flexibility in order that the firm best able to
4 supply customers' wants succeeds in the marketplace. Finally, because imperfect
5 competition treats customers far better than imperfect regulation, where regulation is not
6 required to discipline prices, it should be eliminated.

7 **Q. Please explain why a plan that gives Verizon pricing and marketing flexibility is**
8 **important to the overall success of competition in Rhode Island.**

9 A. Marketing and pricing flexibility are essential to reduce asymmetric regulation of market
10 participants and to provide correct market signals to all competitors regarding the
11 characteristics—products, services, packages, prices, quality levels, term and volume
12 discounts, etc.—that customers value and for which they are willing to pay. Permitting
13 Verizon to market retail services more flexibly as markets open to competition—while
14 controlling prices of services currently deemed in need of protection—will ensure that the
15 least cost supplier is able to serve customers, reducing costs and prices to Rhode Island
16 consumers.

17 Marketing flexibility is also important in industries undergoing rapid technological change
18 because it allows firms to experiment and discover through market trials what services and
19 combinations of services customers want. All competitors must be free to expose different
20 pricing structures and service packages to a marketplace test. Abstract analysis in a
21 regulatory proceeding is no substitute for real-world experience, and Rhode Island
22 consumers will be poorly served if one major supplier in the market—i.e., Verizon—is
23 prevented from finding out exactly the characteristics of communications services for
24 which they are willing to pay.

25 Encouraging pricing and marketing flexibility for the incumbent firm—permitting it to
26 respond to market changes—is essential in fostering a dynamic competitive market with
27 consumer choice of supplier and technology.

28 **Q. Please explain how the application of regulation can be harmful when competition**
29 **already constrains market prices.**

1 A. Any regulation that is applied to one firm and not another produces distorted results. First,
2 regulations apply to markets and services at levels of aggregation that only approximate
3 actual economic markets. For example, regulations which do not distinguish high-cost
4 from low-cost customers in a particular geographic area will distort market outcomes by
5 (possibly) moving prices away from costs for one set of customers while moving prices
6 towards costs for the other. Second, market conditions can change as new suppliers offer
7 new services or new bundles of services, and regulation can prevent the regulated firm from
8 responding to competitive changes in the same way that an unregulated firm would
9 respond. In markets subject to competitive forces, regulation is not benign, and superfluous
10 regulation in the presence of competition is not merely an innocuous safety net. Such
11 regulation can exclude efficient firms from entering, and can raise costs, inhibit competition
12 and ultimately reduce consumer welfare.

13 **Q. Please explain how consumers could be harmed if the incumbent firm is not allowed to**
14 **respond to competitors' initiatives or to changes in market conditions.**

15 A. One effect of not allowing the incumbent firm to respond to competitors' initiatives or
16 changes in market conditions is the constraint it places on the incumbent's ability to spread
17 the recovery of its fixed costs over a wide customer base. In unregulated markets,
18 multiproduct firms recover their shared fixed and common costs in different proportions
19 from different customer classes and services depending upon market conditions. When
20 markets are opened to competition, new entrants concentrate their facilities and marketing
21 initiatives among high margin services customers and geographic areas first.¹³ Open entry
22 ensures that these high-margin customers will always have a choice of suppliers for all of
23 their services irrespective of the regulatory treatment of Verizon. What regulation will
24 determine is whether Verizon will be one of the competitors. If regulation constrains
25 Verizon from adapting its services and prices to serve these customers, their contribution to
26 its shared fixed and common costs will go away, placing greater responsibility for such cost
27 recovery on the remaining classes of customers and services. Consumers are also harmed

¹³ For example, competition in local telephone markets began when competitive access providers such as TCG built a fiber network to provide high-margin carrier access service to large business customers in urban areas.

1 because one competitor—the incumbent—would not be allowed to make a market response
2 to the pricing and service packages offered by other competitors. Inhibiting the
3 development of efficient competition and reducing consumer choice unambiguously harms
4 consumers.

5 **VI. THE COMPANY’S PROPOSAL CONSTITUTES A REASONABLE**
6 **RESPONSE TO CHANGES IN TELECOM LAW, REGULATION**
7 **AND MARKETS, AND RESULTS IN MORE EFFICIENT PRICES**

8 **Q. Please summarize the essential components of the Company’s proposal.**

9 A. The Company proposes to cap primary residential basic exchange and local usage rates for
10 two years. Residential basic exchange rates would be capped at their current level plus no
11 more than \$2 per line. Usage rates would be capped at their current level. Following the
12 two year period primary residential basic exchange and usage rates would increase or
13 decrease in response to the market. Aggregate intrastate switched access service rates will
14 also be capped at the current level although Verizon would be able to change the rates of
15 individual service elements in this category so long as revenue increases are equal to or less
16 than revenue reductions within the category. The Company proposes to make all capped
17 rates subject to changes if an event beyond the control of the firm (an “exogenous event”) is
18 shown to increase or decrease the Company’s costs or revenues. For retail services not
19 covered by a cap, prices would increase or decrease in response to the market at the
20 Company’s discretion. The proposed Plan would not alter wholesale prices for access to
21 UNEs or the level of the Company’s wholesale discount when retail services are resold.

22 **Q. Is the Company’s proposal a traditional price cap plan?**

23 A. No. While there are some basic similarities between the Company’s proposal and
24 traditional price cap regulation, there are important differences that make the Company’s
25 proposed Plan more appropriate to prevailing market conditions. Traditional price cap
26 plans place (what are today) undue constraints on *average* prices (across the firm or within
27 baskets). Those constraints are frequently tied to a measure of national inflation and a fixed
28 productivity adjustment and, given the current plan’s parameters and recent economic
29 conditions, have resulted in overall average price decreases. In contrast, the Company’s

1 proposed Plan recognizes that it is more efficient to allow all suppliers to enjoy pricing
2 flexibility in markets where competitive forces discipline retail service prices. In addition,
3 however, the Company's proposed Plan also imposes limitations on the levels of selected
4 residential rates and aggregate intrastate access service rates to further protect customers.

5 **Q. How will the Company's proposed Plan adequately protect consumers in Rhode**
6 **Island?**

7 A. The Company's proposed Plan offers extended protection to customers in those markets
8 where Verizon *may* arguably retain some control over prices, but will permit Verizon to
9 immediately compete vigorously in markets where it is facing the most competition.
10 Primary Residential basic exchange and usage rates are capped in the Company's proposal
11 thus providing more than adequate protection to consumers.¹⁴ Importantly, Verizon faces
12 substantial actual and potential competition in all retail markets so that its ability to increase
13 retail prices in those markets is effectively constrained. Verizon does not have the ability to
14 exercise market power for services in the retail market.

15 Furthermore, the Company's proposed Plan makes no change in the regulation of wholesale
16 prices: the prices of UNEs, local interconnection and the discount applicable to resold
17 services. Thus, UNE and local interconnection prices remain set at cost-based rates as
18 determined by the Commission, and the price of resold services remains determined by a
19 fixed discount off of the retail price of the service.

20 **Q. Please elaborate on how competition constrains Verizon's ability to increase prices.**

21 A. In markets where customers have a choice of suppliers, if Verizon were to attempt to price
22 above the competitive market level, customers would switch suppliers and the attempted
23 price increase would prove not to be profitable. Even if there were any Rhode Island
24 markets where customers may currently have no alternative source of supply, with low
25 barriers to entry, a Verizon price increase would attract entrants as long as they could make

¹⁴ Given that barriers to entry no longer exist and actual or potential competition already exists throughout Rhode Island, residential service rates are held in check by competitive market forces. The Company's proposed rate caps are an additional protection.

1 a profit at the higher market price. Entry would then provide substitutes to which
2 consumers could shift, and the contemplated price increase would again turn out not to be
3 profitable for Verizon.

4 **Q. Please elaborate on how the regulation of wholesale prices affects the need to regulate**
5 **Verizon's retail prices.**

6 A. The mandatory provision of wholesale services under the Telecom Act currently makes it
7 possible for competitors to enter any Rhode Island retail telecommunications market in
8 which they can provide a portion of the service at least as efficiently as the Company. If
9 Verizon were to attempt to increase retail prices, the margin between the prices of the
10 UNEs that a competitor could use to provide the retail service and the retail market price
11 would increase. Entrants that may have been previously excluded from the market because
12 they could not profitably compete against the market price while paying the wholesale price
13 for UNEs could now compete profitably, customers would have additional choices, and the
14 initial decision to raise retail prices would look less profitable.

15 Similarly, Verizon is obliged to provide to its competitors every retail telecommunications
16 service at a wholesale price determined by subtracting Verizon's retailing costs from its
17 retail price. If the reseller can provide the retailing function for less than Verizon's retailing
18 costs, it can compete successfully in the retail market. If Verizon were to attempt to
19 increase the price of a retail service, the fact that the discount is a fixed percentage of the
20 retail price means that the *absolute* resale discount—measured in cents per minute or
21 dollars per line per month—would increase, at least in the short run. Thus resellers that
22 may just barely compete with a 5-cent margin would find it easier to compete with a 7-cent
23 margin between the market retail price and the price of the wholesale service.

24 In summary, in light of existing competition throughout Rhode Island, the immediate threat
25 of competitive entry and continued regulation of UNE prices and resale at a discount, the
26 Company's proposed Plan effectively (directly and indirectly) constrains Verizon's ability
27 to raise prices for any of its retail services above the competitive market level. For services
28 affecting universal service (e.g., residential basic exchange), rates are capped for two years.
29 For services assigned to the Other Retail Service category in the Company's proposal, the

1 plan relies immediately on competitive forces to constrain prices. The current presence of
2 facilities-based competition in major Rhode Island markets—competitors such as Cox,
3 Conversent and others —coupled with the reduction in barriers to entry in all Rhode Island
4 markets stemming from the availability of UNEs, interconnection and resold services,
5 means that competitive forces will govern prices in those retail markets and that further
6 regulation of those retail prices would be inefficient.

7 **Q. Must there be actual competitors offering services for Verizon’s retail prices to be**
8 **constrained?**

9 A. No. Holding aside the substantial actual competitive activity throughout Rhode Island,
10 economic theory informs us that an incumbent’s ability to raise prices above the
11 competitive level is held in check by the ease with which a potential competitor can enter
12 the market, provide a substitute service and apply competitive downward pressure on the
13 market price.

14 Key to this analysis of potential competition is the presence of sunk costs. If sunk costs are
15 large, potential entrants provide little threat to an incumbent, but if the sunk costs of entry
16 are small, the incumbent’s pricing decision would have to take the likely reaction of
17 potential entrants into account. The implementation of local exchange unbundling and
18 resale significantly reduced these sunk costs of entry into the local exchange market.
19 Competitors do not have to dig up streets or lay fiber to provide ubiquitous service. Since
20 many of these competitors are currently providing other telecommunications services in the
21 same area, they do not even incur the sunk costs of marketing in order to establish brand
22 awareness. Instead, competitors are now able to lease facilities on a month-to-month basis
23 or resell retail services so that if the market fails to materialize, the losses the entrant incurs
24 are much smaller. As a result, if the incumbent increases its retail price, entrants can
25 respond to the increased profit opportunity quickly, rendering a price increase above the
26 competitive level unprofitable.

27 **Q. Is the Company’s treatment of new services under its Plan a reasonable response to**
28 **the marketplace?**

1 A. Yes. The Company proposes to treat new services as it would treat services in the Other
2 Retail Services category of its Plan. Rates and charges for new retail services the Company
3 offers under tariff will be initially set and subsequently increased or decreased in response
4 to market conditions at the discretion of the Company. New services, by definition, are not
5 essential, and are offered (i) to fulfill an identified demand niche or (ii) in response to a
6 service introduction by an existing competitor. For all the reasons discussed here, there is
7 no economic basis to constrain the Company's prices of such services. Because existing
8 services remain available at unchanged prices, consumers cannot be made worse off by
9 pricing new services at any particular level. It is entirely reasonable that the Company be
10 allowed to treat new services as proposed.

11 **Q. Is the Company's proposed treatment of exogenous events appropriate from an**
12 **economic perspective?**

13 A. Yes. The Company proposes that an exogenous adjustment can be identified, by any party,
14 as an event beyond the Company's control that uniquely affects Verizon's costs or
15 revenues. Once identified, the effect of the exogenous event on Verizon would be
16 calculated and used to adjust the rates of Verizon Rhode Island's price regulated services
17 (up or down). Verizon plans to apply such rate adjustments on a cost causation basis, i.e., to
18 move prices toward cost. This exercise parallels the treatment of similar events in an
19 unregulated competitive market.

20 Prices in unregulated competitive markets are governed entirely by market forces that set a
21 level of price in the market at which firms can either survive or go out of business. The
22 market price is a function of both underlying cost (i.e., the underlying direct cost incurred to
23 bring the service to market) and market conditions (i.e., the degree to which supply and
24 demand considerations allow firms in the market to recover shared and common fixed costs
25 in addition to the service's direct costs). When events occur that change the underlying cost
26 basis of the market price—i.e., events analogous to the exogenous events identified in the
27 Company's proposed plan—the market price rises or falls to accommodate the effect of the
28 event. In unregulated competitive markets, the analog of exogenous events that affect the
29 industry are passed through to consumers by market forces and reflected in the prices

1 consumers pay. For exogenous events that affect the regulated company (e.g., an economic
2 event or regulatory change specific to the firm), the Company's proposal ensures that
3 increases or decreases in cost brought about by Commission orders are reflected in the
4 prices consumers pay. Moving prices in the same direction as costs increases economic
5 efficiency.

6 **Q. Is the Company's new Plan consistent with an efficient economic outcome?**

7 A. Yes. The Company's proposed Plan provides both the incentives and certainty required to
8 plan and execute a response to (i) the competition that has developed during the term of the
9 current plan and (ii) the market condition changes I have described in this testimony.
10 Economic efficiency is enhanced under the Company's proposal because rates under the
11 plan are more likely to reflect the cost of providing services and thus will provide more
12 accurate signals to consumers (regarding the underlying cost of fulfilling their demands)
13 and competitors (regarding entry decisions). Under the plan, Verizon has additional
14 marketing flexibility and the incentive to introduce products and services and invest the
15 capital required to expand its service mix so that its success—or failure—is in its own
16 hands.

17 **Q. Why will customers be better off under the proposed plan rather than under a**
18 **GDPPI-X plan, like the one currently in place?**

19 A. In theory, price cap regulation has always been seen as regulatory mechanism to govern the
20 transition from pervasively regulated telecommunications markets to markets governed by
21 competition. As competition develops in different markets at different rates, continuing
22 traditional price cap regulation of all services can distort competition and reduce or delay
23 the benefits that customers expect to derive from having a wider choice of suppliers,
24 technologies and services. Specifically, suppose the productivity offset (**X**) in a traditional
25 price cap plan were set correctly, in the sense that GDPPI-X accurately reflected the future
26 average long run reduction in the regulated firm's cost per unit of output. Given that
27 competitive market forces would be expected to reduce prices on average at this rate, what
28 harm would be done by imposing such a price cap constraint as markets became
29 competitive, some more rapidly than others?

1 First, GDPPI-X is a blunt regulatory instrument, forcing average prices to fall for the
2 regulated firm at the long run rate of decline of unit costs. Productivity growth and cost
3 changes vary significantly from month to month and year to year. In competitive markets,
4 firms do not mechanically match average price reductions each year to the long run average
5 rate of cost reductions. A firm whose prices were subject to such a rule would be at a
6 disadvantage compared with competitors who were free to match price changes to market
7 conditions. Second, the competitive process does not benefit customers exclusively
8 through price reductions. Competition brings technical change, new products and services
9 and levels of service quality in different dimensions that consumers value. Regulation that
10 focuses exclusively on price can distort the mix of other service characteristics that the
11 regulated firm is induced to supply. Third, we must recognize that GDPPI-X is only the
12 target rate of change in unit cost, and in no year should we expect it to be the actual change
13 in unit costs. If that productivity target is ambitious—i.e., to the extent that it exceeds the
14 difference between productivity achievement in the telecommunications industry and the
15 national economy—it is likely that prices will be forced to fall more rapidly than unit costs.
16 While such excess price reductions may benefit customers in the short run, they do not in
17 the long run: the mix of service characteristics the firm supplies is distorted under such
18 regulation and potential competitors are artificially discouraged from entering the market.
19 Consider the business plan of a potential entrant. The CLEC incurs costs today in order to
20 build facilities, attract customers and sell services in the future. If it knows with certainty
21 that the ILEC's retail prices will fall each year in the future irrespective of market
22 conditions, its incentive to invest is strongly reduced.

23 **Q. Doesn't the Commission's GDPPI-X plan result in efficient prices?**

24 A. Not entirely. In addition to the blunt effect of the plan alluded to above, another concern I
25 have with a GDPPI-X plan is that it doesn't capture the effects of competitive price
26 reductions the Company is required to sustain when providing services to its largest
27 business customers. Under price regulation, prices generally change (mostly fall) at an
28 average rate determined by changes in a measure of economy-wide inflation and a
29 productivity offset. A traditional GDPPI-X plan is based on a productivity offset
30 determined, in part, on the basis of a total factor productivity analysis—that is, it is based

1 on an analysis of how all inputs are used to produce all the firm's outputs. On the
2 presumption that the current productivity offset was set correctly, implementation of the
3 current indexed price cap formula results in price changes, which on average, when applied
4 to all the firm's outputs, will track changes in the firm's overall unit costs. This is precisely
5 the intent of the price cap formula in a GDPPI-X price cap plan.

6 In Rhode Island, however, the effect of the plan is felt on only a subset of (price cap
7 regulated) services. The problem is that while the prices for those price cap regulated
8 services are forced to change according to the GDPPI-X plan, the prices for other
9 services—which were also included in the productivity analysis underlying the productivity
10 offset—are likely to be pressed down at a faster rate by competition. If the overall
11 objective of a regulatory plan is to have the prices of price cap regulated services change as
12 they would if in a competitive market, then any productivity offset factor determined as
13 described above should be decreased. It can be shown that the appropriate decrease would
14 be proportional to the fraction of Verizon's total revenue that is derived from the sale of
15 uncapped services.¹⁵

16 **Q. Does this conclude your testimony?**

17 A. Yes.

18

¹⁵ A complete explanation of this adjustment and the rationale underlying it can be found in a recent article by Jeffrey I. Bernstein and David E. M. Sappington, How to determine the X in RPI-X regulation: a user's guide, Telecommunications Policy 24 (2000), pp. 63-68.

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Dr. Taylor received a B.A. *magna cum laude* in Economics from Harvard College, an M.A. in Statistics and a Ph.D. in Economics from the University of California at Berkeley. He has taught economics, statistics, and econometrics at Cornell and the Massachusetts Institute of Technology and was a post doctoral Research Fellow at the Center for Operations Research and Econometrics at the University of Louvain, Belgium.

At NERA, Dr. Taylor is a Senior Vice President, heads the Cambridge office and is Director of the Telecommunications Practice. He has worked primarily in the field of telecommunications economics on problems of state and federal regulatory reform, competition policy, terms and conditions for competitive parity in local competition, quantitative analysis of state and federal price cap and incentive regulation proposals, and antitrust problems in telecommunications markets. He has testified on telecommunications economics before numerous state regulatory authorities, the Federal Communications Commission, the Canadian Radio-Television and Telecommunications Commission, federal and state congressional committees and courts. Recently, he was chosen by the Mexican Federal Telecommunications Commission and Telmex to arbitrate the renewal of the Telmex price cap plan in Mexico. Other recent work includes studies of the competitive effects of major mergers among telecommunications firms and analyses of vertical integration and interconnection of telecommunications networks. He has appeared as a telecommunications commentator on PBS Radio and on The News Hour with Jim Lehrer.

He has published extensively in the areas of telecommunications policy related to access and in theoretical and applied econometrics. His articles have appeared in numerous telecommunications industry publications as well as *Econometrica*, the *American Economic Review*, the *International Economic Review*, the *Journal of Econometrics*, *Econometric Reviews*, the *Antitrust Law Journal*, *The Review of Industrial Organization*, and *The Encyclopedia of Statistical Sciences*. He has served as a referee for these journals (and others) and the National Science Foundation and has served as an Associate Editor of the *Journal of Econometrics*.

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UNIVERSITY OF CALIFORNIA, BERKELEY
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EMPLOYMENT

- 1988- NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC. (NERA)
Senior Vice President, Office Head, Telecommunications Practice Director.
- 1983-1988 BELL COMMUNICATIONS RESEARCH, INC. (Bellcore)
Division Manager, Economic Analysis, formerly Central Services Organization, formerly American Telephone and Telegraph Company: theoretical and quantitative work on problems raised by the Bell System divestiture and the implementation of access charges, including design and implementation of demand response forecasting for interstate access demand, quantification of potential bypass liability, design of optimal nonlinear price schedules for access charges and theoretical and quantitative analysis of price cap regulation of access charges.
- 1975-1983 BELL TELEPHONE LABORATORIES
Member, Technical Staff, Economics Research Center: basic research on theoretical and applied econometrics, focusing on small sample theory, panel data and simultaneous equations systems.
- Fall 1977 MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Visiting Associate Professor, Department of Economics: taught graduate courses in econometrics.
- 1974-1975 CENTER FOR OPERATIONS RESEARCH AND ECONOMETRICS
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Post Doctoral Research Associate: basic research on finite sample econometric theory and on cost function estimation.
- 1972-1975 CORNELL UNIVERSITY
Assistant Professor, Department of Economics. (On leave 1974-1975.) taught graduate and undergraduate courses on econometrics, microeconomic theory and economic principles.

MISCELLANEOUS

- 1985-1995 Associate Editor, *Journal of Econometrics*, North-Holland Publishing Company.
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